Marked Regional Variation in the Incidence of Laboratory-confirmed Bacterial Foodborne Illness: FoodNet, 2000

Angulo F, Jones T, Hawkins M, Hurd S, Smith P, Vugia D, Johnson S, Kennedy M, Griffin P, and the EIP FoodNet Working Group

Background Each year in the United States, an estimated 5 million persons contract bacterial foodborne illnesses. The Foodborne Diseases Active Surveillance Network (FoodNet) is the principal foodborne disease component of the CDC's Emerging Infections Program. FoodNet strives to monitor the burden of foodborne illnesses and interventions designed to reduce them.

Methods In 2000, FoodNet conducted population-based active surveillance for laboratory confirmed cases of Campylobacter, E. coli O157, Listeria, Salmonella, Shigella, Vibrio, and Yersinia infections in Connecticut, Georgia, Minnesota, and Oregon, and selected counties in California, Maryland, New York, and Tennessee (total population 29.5 million). FoodNet contacts approximately 450 clinical laboratories at least monthly to ascertain cases.

Results 12,125 cases were identified; 4640 Campylobacter, 4237 Salmonella, 2324 Shigella, 631 E. coli O157, 131 Yersinia, 101 Listeria, and 61 Vibrio. The incidence per 100,000 population was highest for Campylobacter (15.7), followed by Salmonella (14.4), and Shigella (7.9). Lower incidences were reported for E. coli O157 (2.1), Yersinia (0.4), Listeria (0.3) and Vibrio (0.2). Substantial variation in incidence was reported among sites. The incidence of Campylobacter infections ranged from 6.6 per 100,000 in TN to 38.2 in CA. The incidence of Salmonella infections was less variable ranging from 8.9 in OR to 18.0 in GA. Rates for infections with specific Salmonella serotypes also varied; infections with S. Typhimurium ranged from 1.9 in CA to 3.7 in TN, S. Enteritidis from 1.0 in NY and TN to 5.1 in MD, and S. Newport from 0.3 in OR to 3.5 in TN. Shigella infections ranged from 1.1 in NY to 18.8 in MN. E. coli O157 infections ranged from 0.5 in MD to 4.6 in MN. Incidence also varied by age, especially for Campylobacter and Salmonella infections; for children <1 year of age, the incidence was 88.4 and 33.6, respectively, substantially higher than for other age groups.

Conclusion Campylobacter was the most frequently diagnosed pathogen; however, substantial regional variation occurred. The incidence of Campylobacter and Salmonella among infants is particularly high. Focused research into the reasons for these local differences may provide information about prevention that is of general use. Further prevention efforts are needed to meet the Healthy People 2010 objectives for Campylobacter (12.3/100,000 population), Salmonella (6.8/100,000 population), and E. coli O157 (1.0/100,000).

Suggested citation
Angulo F, Jones T, Hawkins M, Hurd S, Smith P, Vugia D, Johnson S, Kennedy M, Griffin P, and the EIP FoodNet Working Group. Marked Regional Variation in the Incidence of Laboratory-confirmed Bacterial Foodborne Illness: FoodNet, 2000. International Conference on Emerging Infectious Diseases. Atlanta, GA, March 2002.